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ABSTRACT

This advisory list includes instructional media appropriate to the mathematics program in schools ranging from primary to senior high school grade levels. Materials are arranged by type: books, film loops, films, filmstrips, games, or kits. Entries were selected from those materials submitted by publishers which received favorable reviews by educators, and include citation, price if available, grade level, and annotation. (Author/KP)

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ADVISORY LIST OF INSTRUCTIONAL MEDIA

FOR

MATHEMATICS

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State Department of Public Instruction
Division of Educational Media
Raleigh, North Carolina
Jan. & Sept 1977

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Materials Review & Evaluation Services
Division of Educational Media
State Department of Public Instruction

Raleigh, North Carolina
January 1977

ADVISORY LIST OF INSTRUCTIONAL MEDIA

FOR

MATHEMATICS

This bibliography includes instructional media appropriate to the Mathematics program in the schools. The items are listed by type of media. The order of the listing is as follows

activity cards	filmstrips (silent)	programmed materials
art prints	filmstrips (sound)	puzzles
books	games	realia
books with recordings	globes	recordings (cassette tapes)
books (for teacher use)	kits	recordings (disc)
books (reference)	manipulative devices	recordings (reel-to-reel tapes)
books (supplementary texts)	maps	reprints
calendars	measuring tapes	shortstrips
charts	microforms	slide sets (2"x2")
dictionaries	mini-units	slide sets (sound)
duplicating masters	models	study prints
film loops (silent)	periodicals	transparencies
film loops (sound)	pictures	videotapes
films (16mm)	posters	workbooks with recordings

The absence from this list of a given type of media indicates that no media of that type were reviewed or that none were deemed worthy of being called to the attention of schools. The name of a school administrative unit appearing after an annotation indicates that educators in that school system reviewed the item annotated and submitted the information for inclusion on the ADVISORY LISTS. Occasionally, such items may not appear on display at the Materials Review and Evaluation Center in Raleigh. Educators should bear in mind that materials included on this list were selected from those which publishers chose to submit for evaluation and may assume that materials available for purchase not appearing on the list either were not submitted for evaluation or received unfavorable reviews. Information about negative reviews, which do not appear on this bibliography, can be obtained by writing or calling the Materials Review and Evaluation Center. At the end of this bibliography may be found an unannotated list of books which have had favorable reviews in reliable reviewing sources.

The levels at which the media may be most effectively used are indicated by "prim" (primary; Grades K-3), "elem" (elementary: Grades 4-6), "jhs" (junior high school: Grades 7-8[9]), and "shs" (senior high school: Grades [9]10-12). The insertion of an arabic numeral after the grade level indicates that the item is especially pertinent at that specific grade level--e.g., "elem-6."

In some cases prices were not available. Prices shown are those quoted by publishers and producers. Prices quoted do not include postage and are subject to change.

All items included on this bibliography except 16mm films and some items suggested for inclusion by local school administrative units are displayed in the Materials Review and Evaluation Center at 620 North West Street in Raleigh.

PLEASE DO NOT ORDER BOOKS ON THIS LIST FROM THE MATERIALS REVIEW AND EVALUATION CENTER OR FROM THE DIVISION OF TEXTBOOKS. Sources of the books are listed on the colored sheets at the end of this bibliography and in the DIRECTORY OF PUBLISHERS AND PRODUCERS PARTICIPATING IN THE MEDIA REVIEW PROGRAM, a separate publication accompanying the complete set of ADVISORY LISTS OF INSTRUCTIONAL MEDIA. An abbreviated or code name for the publisher/producer appearing in the bibliographic entry on this list appears in the DIRECTORY, where the complete address follows the code name.

Schools may use this list to aid in selection of materials but are in no way restricted to purchasing items included on this list.

BOOKS

Adler, David A. BASE FIVE. Crowell, 1975. 33 p. $4.50. elem

Clear, simple explanation of how to group and record in base ten and base five; vocabulary and format are more simple than the concepts embodied in the book; a suitable special-interest purchase for any collection, classroom or library, of math materials

Adler, David A. 3D, 2D, 1D. Crowell, 1975. 33 p. $4.50. prim-3 elem-4

Very clever introduction to the meaning of measurement, area, volume, and length by way of examining dimensions; one-, two-, and three-dimensional figures; humor in illustrations will appeal to 8-to-10-year-old children; well-organized, above-average material

Arthur, Lee, et al. SPORTSMATH: HOW IT WORKS. Lothrop, 1975. 96 p. $5.11. elem jhs

Explains to students the uses of mathematics in sports through descriptions of events in football, baseball, hockey, basketball, and tennis, showing how mathematics is used to produce records in these sports. (This item also appears on the Health, Safety and Physical Education Advisory List.)

Bitter, Gary G., and Thomas H. Metos. EXPLORING WITH METRICS. Messner, 1975. 64 p. $5.79. elem

Well-written introduction to historical development of systems of measurement and to metric liter, meter, and gram; ranges from primitive measurements through modern metric devices; content, format, and vocabulary compatible with abilities of students in Grades 4-6 who are beginning study of metric measure; activities suggested to readers add to book's value for classroom math collection as well as for library; one of the better books dealing with metrics

Bowles, D. Richard. MAKE WAY FOR METRICATION. Lerner, 1975. 56 p. $4.95. elem-6 jhs shs

Chronological presentation of development of standard units of measure reveals the long effort, historically, to change to metric system; interesting reading for anyone especially concerned about the proposed change; includes a summary of SI information; useful introductory material for individual reading

Branley, Franklyn M. HOW LITTLE AND HOW MUCH: A BOOK ABOUT SCALES. Crowell, 1976. 32 p. $5.95. prim-3 elem-4

Succinct presentation of fundamental idea that measurement is a way of comparing and that there must be some unit against which the comparison is made; centers on concepts of length and temperature; moves from nonstandard to standard units of length; does not overpower reader with too many different units, though both customary and metric are included; elementary explanation of development of Fahrenheit thermometer; easy reading; well organized; illustrations appealing to children. (This item also appears on the Science Advisory List.)

Burns, Marilyn. THE BROWN PAPER SCHOOL PRESENTS THE I HATE MATHEMATICS! BOOK. Little, 1975. 127 p. $6.95. $3.95 paper. elem jhs

This is the type of mathematics book difficult to find for supplemental projects and fun things in math; measurement, probability, geometry, number tricks; best with individuals or small groups; a collection of math fun that would brighten the media center; the style is light (geared to urban living), the math is different--but sound

Froman, Robert. ANGLES ARE EASY AS PIE. Crowell, 1975. 33 p. $5.95. prim

Clever introduction to angles in well-organized, attractively illustrated text; references to time and possibly to cutting up the angles of any triangle would probably not be very meaningful to many K-2 children; might interest some 4th-5th graders; teachers should use this introductory exposure to angles with small groups of students

Gardner, Martin. MATHEMATICAL CARNIVAL. Knopf, 1975. 274 p. $8.95. shs

Collection of mathematical puzzles and games selected from author's columns in Scientific American; contains challenges ranging from speedy calculations to card shuffles, with answers at end of each chapter; includes excerpts from correspondence--skeptical, gullible, clever, and offended--prompted by columns; illustrated with relevant drawings, charts, and diagrams; bibliography; scholarly fun for the mathematically minded

Holt, Michael. MAPS, TRACKS, AND THE BRIDGES OF KÖNIGSBERG: A BOOK ABOUT NETWORKS. Crowell, 1975. 33 p. $5.25. elem jhs-7

Well-developed presentation of the ideas behind networks in an introduction to topology; clearly done; good illustrations expand content; a worthwhile special-interest addition to collections of supplementary math materials

Sitomer, Mindel and Harry. HOW DID NUMBERS BEGIN? Crowell, 1976. 33 p. $5.95. prim-3 elem-4

Well-written presentation of civilization's development and use of numbers; simple and clear enough for eight- and nine-year-olds to understand; well-organized content with good illustrations

Srivastava, Jane Jonas. AVERAGES. Crowell, 1975. 33 p. $4.50. elem

Simple activities to help develop understanding of "average" and to differentiate mode, median, and arithmetic mean; because of the illustrations and format, this book could be mistakenly selected for younger children, whereas the concepts developed are not treated until about Grade 4

BOOKS (FOR TEACHER USE)

Milkent, Marlene M., ed. METRIC TALKS: THE SECOND INTERNATIONAL CONFERENCE ON METRIC EDUCATION. Am. Tech., 1975. 155 p. $7.50 paper.

Contains papers presented at the Second International Conference on Metric Education; several points of view presented by people with diverse backgrounds and interests; best used by teachers interested in learning more about how the metric system will affect different sectors of society

BOOKS (SUPPLEMENTARY TEXTS)

Katz, Saul, et al. MATHEMATICS FOR TODAY. WORKTEXT. Oxford Bk., 1975. 256 p. $2.97 paper. jhs shs

A workbook on everyday uses of math which lends itself to individualized programs; the direct application of mathematics to securing a job and functioning well in it should motivate teen-aged students; for "reluctant" learners and those needing review of basic math

LaPalme, Norman. METRIC WORKSHOP FOR STUDENTS, PARENTS, AND TEACHERS. Franklin/N.J., 1975. 136 p. $5 paper. shs

Introduces the reader to the metric system through a programmed approach; history and fundamental concepts of the system; each section contains a pre-test, instructional matter, and a post-test; several worksheets provide additional experiences with the metric system

Mark, Frank D. EXPLORING METRICS. Learning Trends, 1976. 90 p. $2.60 paper. teacher's edition $3.15. elem jhs

A semi-programmed workbook designed to introduce students to "everyday metrics"; includes all the commonly taught metric units; book could best be used after students have had a chance to put to use some of the metric measuring devices; a practical aid to mastering metrics

Willert, Frederic. METRIC MEASUREMENT MANUAL. Pauper, 1975. 88 p. $1.75 paper. teacher's edition $3.25. prim-3 elem jhs

Story format is used to introduce students to the metric system; special activities guide the student to see why we measure and our need for standard units of measure; suggestions in teacher's manual help teachers provide activities and exercises reinforcing concepts taught

FILM LOOPS (SOUND)

Film Loops (16mm, sound*) in a Series

SLIDE RULE SERIES. 3 color film loops, guides $210. each $70. Cardinal, 1973. (available from EBE). jhs-9 shs

**Separate 16mm film and magnetic tape loops are encased in a single plastic cartridge and must be synchronized manually by advancing the film loop with a fast-forward control. Once synchronized, the loops progress simultaneously, one frame at a time, when the viewer presses a button.*

SLIDE RULE SERIES. (Cont'd).

Cartridge must be used in a machine designed to accommodate it. Consult publisher's literature for information about the machine. Materials are available in sound filmstrip format.

INTRODUCTION TO THE SLIDE RULE: BASIC MULTIPLICATION. 151 fr.
COMPLEX MULTIPLICATION AND DECIMALS. 114 fr.
DIVISION WITH COMPLEX NUMBERS AND DECIMALS. 80 fr.

Introduces student to the slide rule, its parts, and its C and D scales; demonstrates method of locating significant digits of a number on a scale through use of primary, secondary, and tertiary markings and through approximation when a value falls between markings; teaches methods of multiplying and dividing relatively small integers, large numbers, and decimal numbers; explains accuracy limitations of slide rule; careful, systematic approach simplifies what might otherwise prove a confusing task

FILMS (16MM)

METRIC MEETS THE INCHWORM. 16mm. 10 min. sd. guide color $170. Bosustow, 1974. elem jhs shs

Cleverly developed animated film which shows that fear of the unknown is often the major reason for resisting change; Fred Inchworm, a fearful diehard, leaves one job after another--mechanic, miner, pilot, baker, etc.--when each successive employer converts to the metric system; even a visit to the moon via space ship affords poor Fred no relief from metric measurement; amusing and appealing introduction to metrics for a broad range of age/ability levels; advantages of metric system conveyed without didacticism; especially useful for developing positive attitudes about the system

TIC TOC TIME CLOCK. 16mm. 11 min. sd. guide color $160. BFA, 1976. prim elem-4

Shows how hours are arranged on the clock, the "hours" being students in a class forming a human clock; uses rhymes to teach time to the nearest hour and half-hour and to relate time to events in the students' lives. (This item also appears on the Kindergarten-Early Childhood Education Advisory List.)

FILMSTRIPS (SOUND)

METRIC MEETS THE INCHWORM. 1 color filmstrip, 1 cassette tape, guide $25. with disc recording $25. Bosustow, 1975. elem jhs shs

Shows the advantages of converting to the metric system in clever cartoon fashion; an anxious advocate of the English system tries to avoid and delay the inevitability of the metric system, which overtakes him at every turn; in an unpedantic manner, the presentation leads children to see the advantages of metric measurement (linear, volume, weight); good introductory material which will help develop positive attitudes toward the metric system

Filmstrips (Sound) in a Series

COMPUTATIONAL SKILLS IN MATHEMATICS: UNDERSTANDING AND USING DECIMALS. 10 color filmstrips, 10 cassette tapes, 68 duplicating masters, guide $225. Pathescope, 1975. jhs shs

READING AND WRITING DECIMALS
COMPARING DECIMALS
ADDING DECIMALS
SUBTRACTING DECIMALS
MULTIPLYING DECIMALS: PART I
MULTIPLYING DECIMALS: PART II
ROUNDING DECIMALS
DIVIDING DECIMALS BY A WHOLE NUMBER
DIVIDING DECIMALS BY A DECIMAL
CHANGING FRACTIONS TO DECIMALS

Comprehensive multimedia treatment of the various operations involving decimals; factual content within a problem-solving setting; spirit master book offers a good review of the different settings in which decimal computation is taught; would be nice if these materials were available separately; durable, attractive, and packaged for good classroom management; excellent sex and racial representation in illustrations; a thorough review of decimal computation for the school library or math center with a generous budget and an already complete basic collection

INTRODUCING GRAPHS. 4 color filmstrips, 4 cassette tapes, guide $60. with disc recordings $52. BFA, 1975. elem jhs

WHY GRAPHS?
BAR AND PICTOGRAPHS
SINGLE-BAR AND CIRCLE GRAPHS
COORDINATE SYSTEM

Discusses bar, pictographs, single bar, circle graphs, and graphs on a coordinate system; guide contains discussion questions to follow each filmstrip, as well as several masters of graphs which can be reproduced for student use; instructs students to construct and use various graphs and select those best suited for presenting the particular information they gather; colorful, worthwhile series

INTRODUCING THE ELECTRONIC CALCULATOR. 2 color filmstrips, 2 cassette tapes, guide $34. with disc recordings $28. BFA, 1975. elem jhs shs-10

A BOXFUL OF MAGIC
ELECTRONIC WIZARD

Discusses some of the ways human beings have calculated throughout history; emphasizes most recent method, the electronic calculator, explaining its basic principles and illustrating its uses; points out that the calculator can only do what the student instructs it to do; clear presentation; a good instructional tool

THE METRIC SYSTEM. 6 color filmstrips, three 12" disc recordings 33 1/3 rpm, guide $78. with cassette tapes $78. UEVA, 1974. shs

MEASURING
THE BASIC SYSTEM
A NEW WORLD
THE METRIC KITCHEN
A METRIC DAY
THE METRIC UNIVERSE

Series briefly reviews the history of the metric system, outlines a basic version of the system, shows several of its uses in the physics laboratory and the kitchen, tells what a day would be like in the system, and speculates on the future; good introductory content for secondary groups

USING THE METRIC SYSTEM. 6 color filmstrips, three 12" disc recordings 33 1/3 rpm, guide $78. with cassette tapes $78. UEVA, 1974. elem-6 jhs shs

MEASURING LENGTH	MEASURING TEMPERATURE
MEASURING CAPACITY	CALORIES
MEASURING MASS	METRIC TOOLS

Presents the basic ideas of the metric system--length, capacity, mass, and temperature--then discusses the calorie; concludes with a discussion of some of the metric tools; introductory series for students with little background in the practical application of the metric system

Filmstrips (Sound) in a Series for Teacher Use

TEACHING METRICS. 2 color filmstrips, 2 cassette tapes, guide $40. with disc recordings $34. BFA, 1975.

A SIMPLE WAY TO TEACH THE METRIC SYSTEM
CLASSROOM USES OF THE METRIC SYSTEM

A good presentation of metric measure for teachers who have ideas for classroom instruction; probably best used by individual or small groups of teachers; contains useful, practical ideas for presenting the metric system to students

GAMES

EQUATIONS: THE GAME OF CREATIVE MATHEMATICS. 1 playing mat, 12 red cubes, 8 blue cubes, 6 green cubes, 6 black cubes, 1 timer, sponge container, guide $10. WFF 'N PROOF, 1975. elem jhs shs

Game designed to develop students' facility in the basic arithmetic operations--addition, subtraction, multiplication, division, exponentiation (raising a number to a certain power), and root (square root, cube root, etc.); complexity of game determined by abilities of players; object of game is to group a number of given cubes together so that the numbers or operations appearing on the cubes' faces form a valid arithmetic expression which equals a predetermined number, or "Goal"; guide contains rules for basic game as well as several variations and sample game moves

ON-SETS. 16 color cards, 2 playing mats, 8 color cubes, 4 red-symbol cubes, 3 blue-symbol cubes, 3 numeral cubes, 1 timer, 1 instructional manual $10. WFF 'N PROOF, 1975. elem jhs shs

Game designed to teach some of the basic ideas of set theory; these ideas are put to use in the game, thus providing a medium for practicing the concepts; instructions manual describes a sequence of games and the rules for each; sample game moves given and explained

KITS

BEGINNING METRIC MEASUREMENT. 6 color filmstrips, 3 cassette tapes, 30 metric rulers, 3 two-meter measuring tapes, 6 centimeter grids, 1300 centimeter cubes, 2 measuring mats, guide $145. SVE, 1974. prim-3 elem

Well-organized module employing simple visuals and activities to present fundamental measurement concepts; the six filmstrips build on each other, beginning with the concept of measurement, unit of measure, and length, and

BEGINNING METRIC MEASUREMENT. (Cont'd).

proceeding through area and volume, ending with a review of the relationships among length, area, and volume; the remaining module components provide reinforcement of the concepts and provide practice in the skills of measurement; colorful, "fun" approach which is also sound mathematics; children will enjoy the dialogue between a three-dimensional puppet, Box, and a talking screen as a "Super Duper All Purpose Measuring Device" is constructed before their eyes; Box sums up each metric concept in his diary, providing good review for students; excellent teacher's manual offers numerous follow-up activities employing the manipulatives; outstanding instructional program

CONSUMER MATH. 2 color filmstrips, two 12" disc recordings 33 1/3 rpm, 13 duplicating masters, 10 visuals, teacher's guide $50. with cassette tapes $55. Newsweek, 1976. jhs shs

Multimedia kit designed to help students better understand and use the mathematics they need as intelligent consumers; emphasizes that a grasp of fractions, percentages, decimals benefits the shopper in daily situations of figuring discounts, credit-interest rates, cost increases, tipping; stresses value of math skills to help buyer get the most for the money; cost per ounce and pound, shrinkage in packaging, miles per gallon; multi-ethnic representation in photographs; good sound, color

MULTIPLICATION LEARNING MODULE. 8 color filmstrips, 8 cassette tapes, 16 cassette/response card lessons (8 cards, 8 cassette tapes), 66 flash cards, 1 Factor Game, 1 Monsterplication game, 80 algorithm activity cards, guide $225. SVE, 1975. elem jhs

Rather thorough presentation of multiplication review and practice through games, flash cards, coded algorithm cards, filmstrips, and cassette response cards; reviews basics and 1-, 2-, and 3-digit multipliers; the story line is sometimes a little long or tedious compared to the scope of multiplication actually developed or reviewed; durable, well-constructed materials; much of the kit is limited to individual or small-group use; a teacher would want to consider carefully the return in learning by the children compared to the investment; kit items are available as separate entities

PROBLEM SOLVING MODULE. 4 color filmstrips, 2 cassette tapes, 12 games (2 copies each of 6 games), 48 addition and subtraction problem cards, 48 multiplication and division problem cards, crayons, guide $175. SVE, 1974. prim elem

Designed to supplement any basal mathematics text by providing students with problem solving strategies; techniques, restatement, and making a model are introduced in four filmstrips, then reinforced through a set of 12 games; addition, subtraction, multiplication, and division story problems are presented in games; problem cards provide students with opportunities to make models or restatements as they solve story problems; colorful, attractive components; sturdily boxed

DIRECTORY OF PUBLISHERS AND PRODUCERS

Am. Tech. - American Technical Society, 5608 Stony Island, Chicago, Illinois 60637

BFA - BFA Educational Media, 2211 Michigan Avenue, Santa Monica, California 90406

Bosustow - Stephen Bosustow Productions, 1649 11th Street, Santa Monica, California 90404

Cardinal - Cardinal Associates, Inc., P.O. Box 1947, Charlotte, North Carolina 28233

Crowell - Thomas Y. Crowell Company, 666 Fifth Avenue, New York, New York 10019

EBE - Encyclopaedia Britannica Education Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611

Franklin/N.J. - Franklin Publishing Company, Inc., Palisade, New Jersey 07024

Knopf - Alfred A. Knopf, Inc., 201 East 50th Street, New York, New York 10022

Learning Trends - Learning Trends, Division of Globe Book Company, Inc., 175 Fifth Avenue, New York, New York 10010

Lerner - Lerner Publications Company, 241 First Avenue North, Minneapolis, Minnesota 55401

Little - Little, Brown and Company, 34 Beacon Street, Boston, Massachusetts 02106

Lothrop - Lothrop, Lee & Shepard Company, 105 Madison Avenue, New York, New York 10016

Messner - Julian Messner, Inc., One West 39th Street, New York, New York 10018

Newsweek - Newsweek, 444 Madison Avenue, New York, New York 10022

Oxford Bk. - Oxford Book Company, Inc., 11 Park Place, New York, New York 10007

Pathescope - Pathescope Educational Films, Inc., 71 Weyman Avenue, New Rochelle, New York 10802

Pauper - Pauper Press, P.O. Box 303, Two Rivers, Wisconsin 54241

SVE - Society for Visual Education, Inc., 1345 Diversey Parkway, Chicago, Illinois 60614

UEVA - Universal Education & Visual Arts, 100 Universal City Plaza, Universal City, California 91608

WFF 'N PROOF - WFF 'N PROOF, 1490 South Boulevard, Ann Arbor, Michigan 48104

Materials Review & Evaluation Services
Division of Educational Media
State Department of Public Instruction

Raleigh, North Carolina
September 1977

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ACTIVITY CARDS

STUDENT ACTIVITY CARDS FOR CUISENAIRE RODS. 130 activity cards, guide $11.95. Cuisenaire, 1975. K prim elem

130 activity cards in 10 sets for using Cuisenaire rods to develop key math concepts in Grades K-6; written in simple children's language and providing widely varying games. activities, word problems; Sets 1-4 and Sets 6-9 are sequential, Sets 5 and 10 can be used independently; useful supplementary, manipulative aid

BOOKS

Asimov, Isaac. ASIMOV ON NUMBERS. Doubleday, 1977. 249 p. $9.95. shs

Seventeen witty, engaging, first-person essays by famed science fiction writer, Isaac Asimov, on numbers, large and small, and number relationships from elementary to esoteric; Asimov ponders time, computers, googols--even change ringing (all the different "changes" it's possible for bells to be rung in) inspired by Dorothy Sayers' NINE TAILORS; the role of his topics in the real world only enriches this publication

Bitter, Gary G., and Thomas H. Metos. EXPLORING WITH POCKET CALCULATORS. Messner, 1977. 64 p. $6.64. elem jhs

Operations and uses of pocket calculators explained and early computing devices examined, putting pocket calculator in proper historical perspective; electronic calculator discussed, along with many uses; interesting final section is "Exploring Advanced Calculators"; good graphics, photos, format

Charbonneau, Manon P. HIDDEN RODS/HIDDEN NUMBERS. Cuisenaire, 1975. 78 p. $2.50 paper. prim elem jhs

Good activities making use of Cuisenaire rods; oral activities involve students extensively in building number concepts and relations, as well as in developing logical thinking; exciting games, with answers in back of book; excellent introduction explains rationale behind effective use of rods with children

Deming, Richard. METRIC NOW. Dell, 1976. 159 p. $1.25 paper. shs

Good presentation of the why, what, and when of metrics, nicely covering history of metrics, concept itself, implications for consumers; because of almost straight text, few graphics, book might be reserved for teacher use or with adult education classes

Leighton, Ralph, and Carl Feynman. HOW TO COUNT SHEEP WITHOUT FALLING ASLEEP. Prentice, 1976. 39 p. $5.95. K prim

An episode in the life of a shepherd trying to keep track of his flock is context for introducing several counting systems that use symbols for numbers--notching a stick, using black rocks and white rocks, chipping on a stone; bookkeeping method for recording numbers on stone introduces reader to simple adding with Roman numerals; finally, students learn to construct their own addition and subtraction machine with paper strip; nice illustrations; amusing story line

Leslie, Glenn F., and Marv Gold. MEET THE METERS! Ballantine, 1976. 75 p. $2.95 paper. jhs shs

Oversized, cartoon format presenting basic metric concepts in entertaining, action-packed drawings featuring Hector Meter, Millie Meter, and their dog, Killer Meter; brief history of metric system and appendix for persons with working knowledge of metrics; many metric ideas related to everyday activities

Lowenstein, Dyno. GRAPHS. Watts, 1976. 65 p. $3.90. elem jhs

Excellent introduction to graphing, covering variety of topics and types of graphs; interesting examples; section on lying with graphs is fine feature; also useful in

GRAPHS. (Cont'd)

consumer math, adult education; volume of reading and use of percent suggests that text may be more generally appropriate for Grades 6-9

Maestro, Betsy and Giulio. HARRIET GOES TO THE CIRCUS. Crown, 1977. unp. $6.95. K prim

Delightful, brilliantly colored book presenting ordinal numbers in interesting context--Harriet, the roller-skating white elephant, is determined to be first in line to circus; covers first through tenth, then reverses order for review; excellent for teacher-led discussion with small groups

Mims, Forrest M., III. NUMBER MACHINES: AN INTRODUCTION TO THE ABACUS, SLIDE RULE, AND POCKET CALCULATOR. 54 p. $5.95. jhs shs

Good enrichment material on development of calculators all the way from the abacus to pocket computers; simply explained, excellent historical perspective on various calculating devices; beautifully organized "how-to" book for constructing your own calculator; well illustrated

Olney, Ross and Pat. POCKET CALCULATOR FUN AND GAMES. Watts, 1977. 86 p. $4.90. elem jhs

Collection of interesting games, word problems, requiring pocket-sized calculator, a deck of cards or pencil and paper, maybe some dice or masking tape, plus one or two other people or just oneself; strictly an adjunct to math problems--not designed to teach math concepts but can enhance basic skills

Schimizzi, Ned V. MASTERING THE METRIC SYSTEM. NAL, 1975. 164 p. $1.50 paper. jhs shs

Discusses historical background of metric system, introduces metrics, metric prefixes and unity, and International System of Units (SI); unique aspect is a look at how metrics will affect specific activities, individuals--teachers and instruction, sports, farming, motorists, etc.; 1975 Metric Conversion Act included

Schlossberg, Edwin, and John Brockman. THE POCKET CALCULATOR GAME BOOK. Bantam, 1975. 158 p. $1.50 paper. jhs shs

Paperback of interesting, amusing experiences with calculators which create new context for game playing, human interaction, and develop practical uses of calculator; approximately 50 games and puzzles; format outlines players, tools, object of game, play, strategy, and sample play

Watson, Clyde. BINARY NUMBERS. Crowell, 1977. 33 p. $5.95. prim-3 elem

Interesting, simple development of binary number system and its relationship to computers; introduces principles of binary numbers through familiar or fun examples--measuring piece of string, weighing pieces of candy, writing secret messages using a binary code number; pen-and-ink drawings accented with red

Wyler, Rose, and Eva-Lee Baird. NUTTY NUMBER RIDDLES. Doubleday, 1977. 96 p. $5.95. elem jhs

Stories, jokes, riddles, tricks with coins and toothpicks, braintwisters; answers or explanations included; most can be solved with knowledge of whole numbers and fraction arithmetic; challenging, amusing, humorously illustrated

Wyler, Rose, and Gerald Ames. FUNNY NUMBER TRICKS: EASY MAGIC WITH ARITHMETIC. Parents, 1976. 44 p. $4.96. elem

Tricks easy enough for 9-10-11-year-olds to perform in good material for learning centers--e.g., domino predicting, counting tricks, card games; engaging fictional characters spice contents; requires fairly simple knowledge of order and some basic number facts; valuable motivation for children with lagging interest in math; colorful illustrations

BOOKS (REFERENCE)

Linn, Charles F., ed. THE AGES OF MATHEMATICS. Doubleday, 1977. each $5.95. jhs-9 shs

Moffatt, Michael. VOLUME I: THE ORIGINS. 137 p.
Linn, Charles F. VOLUME II: MATHEMATICS EAST AND WEST. 137 p.
Cook, Cynthia Conwell. VOLUME III: WESTERN MATHEMATICS COMES OF AGE. 151 p.
Cook, Peter D. VOLUME IV: THE MODERN AGES. 151 p.

Surveys mathematical history in interesting, readable texts requiring some knowledge of world history for maximum benefit; traces origins of math from Mayans, Incas, through Greeks, Chinese, up to modern era; important mathematicians, concepts, problems, theories covered; certain sections--e.g., development of number systems or the calendar--will interest junior high school or younger children, but series' total expense suggests most profitable use where math teacher has selected it, plans to incorporate information in special assignments

BOOKS (SUPPLEMENTARY TEXTS)

Davidson, Jessica. 2, 4, 6, 8...LET'S START TO CALCULATE (CALCULATOR MATH). Cuisenaire, 1976. 49 p. $3.95 paper. elem jhs

Useful activities for students employing calculators to enhance learning of math concepts; sound content covers such topics as verifying computations, decimal system, basics linking all math concepts--e.g., how division undoes multiplication; helpful middle-grade material

Galerstein, David H. MASTERING FUNDAMENTAL MATHEMATICS. AMSCO, 1976. 414 p. $2.65 paper. jhs-9 shs

Designed to present basic arithmetic operations step-by-step, sequentially, to students weak in both mathematical and reading skills; emphasizes process rather than theory in 129 lessons, 91 of which are devoted to whole number operations; remaining lessons treat measurement operations with measuring, and geometry

Siderman, Sheila. MEASURING IN METRIC: A DETAILED WORKBOOK COVERING ASPECTS OF METRIC MEASURING AND MATHEMATICAL METRIC RELATIONSHIPS. Cuisenaire, 1976. 53 p. $2.95 paper. elem jhs

Useful collection of over 50 activities for employing Cuisenaire rods to teach metric measurement concepts; forces student involvement in measurement activities--e.g., finding their body mass, footprint area; sound content; metric terms and symbols used properly; attractive format

Books (Supplementary Texts) in a Series

Bassler, Otto C., et al. SUCCEEDING IN MATHEMATICS. Steck, 1976, 1977. K prim elem

LEVEL K. 94 p. $1.75 paper. teacher's edition $1.75 paper
LEVEL 1. 204 p. $2.65 paper. teacher's edition $2.65 paper. test booklet with 12 duplicating masters $5.10
LEVEL 2. 204 p. $2.65 paper. teacher's edition $2.65 paper. test booklet with 18 duplicating masters $5.10
LEVEL 3. 252 p. $2.95 paper. teacher's edition $2.95 paper. test booklet with 22 duplicating masters $5.10
LEVEL 4. 284 p. $2.95 paper. teacher's edition $2.95 paper. test booklet with 24 duplicating masters $5.10
LEVEL 5. 314 p. $2.95 paper. teacher's edition $2.95 paper. test booklet with 30 duplicating masters $5.10
LEVEL 6. 316 p. $2.95 paper. teacher's edition $2.95 paper. test booklet with 28 duplicating masters $5.10

Complete K-6 mathematics program, up-to-date, useful as basis or supplement to other programs; especially designed for average and below-average students; format and

SUCCEEDING IN MATHEMATICS. (Cont'd)

ungraded approach make material suitable for various ability and age levels; easy-to-read explanations, clear examples, patterns, other devices for poor readers; emphasis on operations, not theory; highly colorful, much eye appeal; the fact that all levels are paperbacks (consumable) should be considered before purchase

BOOKS (FOR TEACHER USE)

Rinehart, John S. GO METRIC. HyperDynamics, 1976. 32 p. $1.75 paper.

Useful little handbook on metric measure which offers some conversions, but, more importantly, suggests ways in which metrics will affect our everyday lives at grocery store, service station, on highways, etc.; sound reasoning, accurate account

FILMS (16MM)

COUNT IT OUT! (THE PATH OF MATH). 16mm. 10 min. sd. guide color $150. BFA, 1976. prim-3 elem

Shows whole number operations--addition, subtraction, multiplication, division--as some form of counting: counting forward to add, counting backward to subtract, etc.; covers many ideas very briefly, restricting usefulness to introductory or summary purposes

EDUCATION: WHY MATH? 16mm. 11 min. sd. guide color $170. Barr, 1977. prim elem

Interesting film showing real-world applications of math in measuring, comparison shopping, and saving money; useful for illustrating why we study mathematics in school through practical examples in child's everyday life--e.g., building a clubhouse, buying soft drinks

THE METRIC MOVIE. 16mm. 15 min. sd. guide color $245. Best, 1975. elem-9 shs

Partially animated film dealing with history of measurement and with seven base units (and commonly used prefixes) of SI metric system; strictly SI; animated segment is humorous and informative; non-animated segment, though not so entertaining, is easy to follow and understand

METRICS FOR ELEMENTARY SERIES. METRICS: LENGTH AND DISTANCE. 16mm. 10 min. sd. guide color $160. Paramount/Oxford, 1974. elem jhs

Metrically calibrated instruments presented in everyday situations--measuring objects, distances, one's height and waistline with meter stick and tape; useful repetition of terms ("meter," "deci," "centi," "deka," "hecto," "kilo"); uses "er" spelling of metric units and European pronunciation of "kilometer"; for introduction or summary

METRICS FOR ELEMENTARY SERIES. METRICS: VOLUME AND CAPACITY. 16mm. 10 min. sd. guide color $160. Paramount/Oxford, 1974. elem jhs

Introductory film showing many everyday uses of large and small metric units of volume and capacity; demonstrates relationship between metric and money systems and between volume and length; film uses "er" spelling for metric units; some measuring devices shown rely on symbols not commonly used today

METRICS FOR ELEMENTARY SERIES. METRICS: WEIGHT AND MASS. 16mm. 10 min. sd. guide color $160. Paramount/Oxford, 1974. elem jhs

Examples of practical uses of metric weight (mass), showing relationships among various metric units; use of metric system in students' everyday environment will appeal; excellent teacher's guide; two cautions--no mention of word "mass" (which appears in title) and some situations show symbol for grams not currently recommended

SIMILAR TRIANGLES. 16mm. 8 min. sd. guide color $125. Intl. Film Bur., 1976. elem jhs shs-10

Clever, animated film illustrating various ways to create similar triangles; unnarrated, enabling teacher to comment throughout film; appropriate for high school geometry courses and for introductory lessons on similar triangles in the middle school

Films (16mm) in a Series

METRICS FOR PRIMARY. 4 reels 16mm. each 11 min. sd. guides color each $190. Paramount/Oxford, 1976. K prim

Titles: HOW BIG IS BIG?; HOW HEAVY IS HEAVY?; HOW HOT IS HOT?; HOW LONG IS LONG?

Using clever marionettes to convey metric information, the films handle four basic areas of metric application in primary youngsters' world of experience; each film examines different concept of measurement--length, mass, capacity, temperature

FILMSTRIPS (SOUND)

LET'S LOOK AT LOGIC. 2 color filmstrips, 2 cassette tapes, 20 activity cards, guide $54.50. Guidance Assocs., 1977. elem jhs-7

Logic lessons, activities teaching elementary students to think logically, not only in mathematical contexts but also in life; features Tim, Diane, and Eddie in Logicland, where they arrived by rocket ship; in order to return home, they must solve problems requiring careful analysis of language, ability to draw inferences, and answers to two specific logic problems--one using algebraic notation, other using a form of Venn Diagram; colorful drawings, amusing, probing; excellent syllogisms on accompanying activity cards

Filmstrips (Sound) in a Series

ADVENTURES IN ADDITION AND SUBTRACTION. 6 color filmstrips, three 12" disc recordings 33 1/3 rpm, 24 duplicating masters, guide $86. with 6 cassette tapes $94. Coronet, 1976. (available from Keller Assocs.). K prim

Titles: GOLIATH + BEN = TROUBLE; ICE CREAM PLUS; THE ADD-ON TREEHOUSE; CLOWNING AROUND WITH SUBTRACTION; THE THREE BEARS MINUS GOLDILOCKS; THE BORROWING PIRATE

Zany cartoon characters in interesting, well-illustrated stories develop elementary mathematical concepts for primary youngsters--subtraction without borrowing and with borrowing, addition with carrying, meaning of addition and subtraction, and addition without carrying; young viewers encouraged to participate, to find answers before cartoon cast does; ditto masters provide enrichment activities

CONSUMER EDUCATION: BUYER BE WISE (four sound filmstrips). Described on Social Studies Advisory List

EXPLORING MATH. 3 boxes each containing 1 color filmstrip, 1 cassette tape, guide $69.50. with disc recordings $69.50. each $26. each with disc recording $26. Guidance Assocs., 1977. elem jhs

Titles: A FINITE NUMBER SYSTEM; GAMES AND DIVERSIONS; PATTERNS AND FUNCTIONS

Series exploring interesting mathematics activities dealing with patterns and encouraging flexibility in working with numbers; covers finite number system, mathematical concept of pattern, and two math games, one on pattern recognition, other on concepts of the unknown and easy algebraic diagraming; children narrate much of program; colorful visuals; useful enrichment for good middle-grade math students

INTRODUCING ARITHMETIC OPERATION. 4 color filmstrips, 4 cassette tapes, guide $68. BFA, 1976. prim elem
Titles: INTRODUCING ADDITION; INTRODUCING SUBTRACTION; INTRODUCING MULTIPLICATION; INTRODUCING DIVISION

Clear, colorful filmstrips on basic operations with whole numbers, explaining them as ways of counting--e.g., subtraction as counting backward by one's, division as counting backward by one's, two's, three's, etc.; students are shown how to count backward and forward and how to construct tables of different operations; relative simplicity of learning tables instead of "counting out" answers to arithmetic problems clearly demonstrated; well paced; adequate reinforcement; appealingly narrated by child's voice

INTRODUCING THE METRIC SYSTEM. 3 color filmstrips, 3 cassette tapes, guides $50. Natl. Geog., 1977. prim elem jhs
Titles: LENGTH; WEIGHT; VOLUME AND TEMPERATURE

Excellent introductory series on metric system which draws on our association with real world to make comparisons between U. S. customary measure and metric measure; readily available objects--paper clips, coins, baseball bat, marbles--used in follow-up activities; superb National Geographic color; excellent individual guides for each strip, all color-coded. Did you know that North Carolina's Oregon Inlet bridge stretches almost four kilometers from end to end? (See it on the filmstrips!)

METRICS FOR CAREER EDUCATION. 6 color filmstrips, 6 cassette tapes, guide $86.95. EBE, 1976. jhs-9 shs
Titles: METRICS FOR WOODWORKING; METRICS FOR HOME ECONOMICS; METRICS FOR GENERAL METALS; METRICS FOR MACHINE SHOP; METRICS FOR DRAFTING; METRICS FOR ENERGY AND POWER

Excellent series illustrating how metric system can be adapted and used in various trades; each filmstrip introduces metric units related to specific career area, demonstrating practical methods of converting conventional tools and machines to metric measure; good, clear photos and graphics; comprehensive teacher's guide

METRICS ON THE JOB. 3 color filmstrips, 3 cassette tapes, guide $59.50. Clearvue, 1975. (available from Stone's). jhs shs
Titles: HOW TO USE A METRIC MICROMETER; HOW TO USE A METRIC VERNIER CALIPER; HOW TO USE A METRIC RULE

Emphasizes the need for accurate precision instruments and machines in program illustrating how to use metric micrometer, metric vernier, and metric rule; several uses of each tool shown in clear, simple oral and visual explanations; both men and women depicted on the job; effectiveness is maximized if measuring devices like these in filmstrips are easily available for student's use immediately after viewing

PRIMARY METRICS. 8 color filmstrips, 8 cassette tapes, guide $99.50. Clearvue, 1975. (available from Stone's). prim elem-4
Titles: A FIRST LOOK AT MEASUREMENT; MEASURING DISTANCE; CENTIMETERS; METERS AND DECIMETERS; AREA: SQUARE CENTIMETERS; VOLUME: CUBIC CENTIMETERS; VOLUME: THE LITER AND OTHER LIQUID MEASURES; SUMMARY: LENGTH, VOLUME AND AREA

Animated character, Professor Centi, a scholarly centipede, familiarizes students with metric concepts of measure in humorous, colorful series; first four filmstrips examine reasons for standardized measuring units, how to measure length, area, volume in metric units; last four strips discuss area and volume; best used to introduce students to measurement ideas prior to "hands-on" measurement experiences, or as summary

KITS

METRIC ACTIVITY LEARNING PROGRAM (MALP) - MIDDLE. activity cards, divider cards, answer cards, 12 easy off crayons, 15 plastic card protectors, 5 copies of student introduction cards, 35 student progress charts, pre- and post-tests, 35 sheets of centimeter squares paper, 30 metric rulers, guide $94.50. Metric Media, 1975. elem jhs

Ninety-two activity cards teaching metric length, weight, area, volume, temperature, designed for students 8-12 years old; five copies of each card enable several students to work from kit; sequenced activities prescribe pre-test, several drills in metric terms, performance of tasks specified on cards teaching metric facts (questions, games, puzzles, etc., requiring common items like buttons, book, eraser), and post-test; large, easy-to-read cards; clearly defined activities building always on previously learned concepts; thorough teacher's guide, plus several good correlated activities

THE METRIC SKILL BOX. 6 color filmstrips, 6 cassette tapes, 41 duplicating masters, guide $120. Troll, 1976. elem jhs

Titles: THINK METRIC, INTRODUCING THE METRIC SYSTEM; WORKING WITH METRIC LENGTH; WORKING WITH METRIC VOLUME; WORKING WITH METRIC AREA; WORKING WITH METRIC WEIGHT; WORKING WITH METRIC LIQUID CAPACITY

Each metric unit is introduced by showing its size in relation to well-known objects; relative sizes between metric units also explained and illustrated; duplicating masters reinforcing concepts presented in filmstrips give students practice with decimals as they relate to metric system, converting from U. S. customary to metrics and finding temperature in degrees Celsius; pre-viewing/post-viewing activities suggested

SKILLSEEKERS I: WHOLE NUMBER COMPUTATION. ADDITION/SUBTRACTION. 11 cassette tapes, 11 duplicating masters, 4 student answer books, guide $129. Addi[illegible]1977. prim elem

Audio-tutorial mathematics supplement that provides reteaching and practice in basic addition and subtraction; student-directed, simple exercises outlined on paper tablets; students correct their own pre-tests, listen to audio instructions, then practice independently on detachable worksheets in tablet; all materials color coded; comprehensive teacher's guide

Kits in a Series

ACTIONMARK PAPER RESPONSE SYSTEM. 3M, 1975. (available from Stone's). prim elem jhs
See producer's literature for additional information and prices of individual components.

MATH PROBLEM BOOK SERIES. 3 books, 6 packages of 4A answer sheets, 6 packages of 4B answer sheets, 3 packages of Student Prescription Objective sheets, 18 boxes of crayons $287.30.

Drills covering set theory, addition, subtraction, multiplication, division, money, fractions, measurement (English and metric), geometry, inequalities, decimals, probability and statistics, rational numbers, real numbers, exponential and scientific notation, ratio and per cent, functions and graphs; each of three levels (IV-V, VI-VII, VIII-IX) is preceded by a 100-point placement survey for assessing student's needs; tests use multiple-choice format with common errors as distractors; ACTIONMARK System provides immediate feedback on accuracy of answers to student as well as simple grading for teacher: student colors choice with ACTIONMARK crayon and, if correct, a predetermined number or symbol appears in box; if incorrect, another symbol shows, thus enabling teacher to see how many attempts were needed and to assess areas in which student needs help

ACTIONMARK PAPER RESPONSE SYSTEM. (Cont'd)

MATH SKILL DRILL UNIT. Thirty 100-sheet packages of skill sheets, 12 boxes of crayons $137.40.

Drills the student in addition, subtraction, multiplication, and division skills with operands ranging from single digit to decimal, reading the clock and calendar, and using common metric system prefixes; ACTIONMARK System gives immediate feedback on student's accuracy; when answer space is colored with ACTIONMARK crayon, correct answer emerges so that student knows immediately if his/her answer, which cannot be erased, is correct; kit lacks much needed teacher's guide and labeling on outside of box